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EXAMINER	
MOE, AUNG SOE	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/650,764	OHTA, TADASHI	
	Examiner	Art Unit	
	Aung S. Moe	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-30 and 48-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *49-51* is/are allowed.

6)☒ Claim(s) *4-30,48 and 52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/20/2006 have been fully considered but they are not persuasive.

Regarding claim 52, the Applicant alleged that "Figs. 9, and page 34, line 30 to page 35, line 6" satisfied the 112, first paragraph, rejection.

In this case, claim 52 clearly called for **more limitations** than what is quoted by the applicant (i.e., a white balance calculator that reads out and process signals once again from the pixels of the image sensor") in page 9 of the remarks.

For example, the claim 52 recited "a white balance calculator that reads out and process signals **once again** from the pixels of the image sensor **without resetting the signals of the image sensor**" and either Fig. 9 or page 34, line 30 to page 35, line 6 show wherein "a white balance calculator reads out and process signals **once again *without resetting* the signals of the image sensor**" as required by present claimed invention.

In Fig. 9, the Applicant merely shows that a white balance (i.e., step 105) is performed on the signal read-out at the step 104 for shooting, after the auto focus/Exposure detection processes at steps 102-103, and recorded the image data at the steps 104 (i.e. Shooting as shown in Fig. 10).

In page 34, lines 30 to page 35, line 6, merely stated "*the read out signal is transformed to digital signal and recorded in a buffer memory for one frame in a hurry, and, then, processed such as gamma processing, white balance processing, compression, and the like, and, after that, recorded in the recording medium 805 as a digital still image. In this case,* ***immediately after***

***the imaging signal has been recorded in the buffer memory**, accumulated signals from pixels of the same color filter are added and **read out again** from the image sensor, and the aforementioned white balance processing is performed based on the magnitude of each color signal to reduce color difference.*"

In view of the above, Fig. 9 merely show the setting of shooting condition (i.e., by half-pressing the shutter button at steps 101-103) and capturing the image data at steps 104 for recoding (i.e., by Full-pressing of the shutter of the camera), and Page 34, lines 30- Page 35, line 6, merely stated that image data from the image sensor can be read out *again* immediately after the imaging signal has been recorded in the buffer memory. However, the limitations required by claim 52, such that "a white balance calculator reads out and process signals **once again *without resetting* the signals of the image sensor**", is not clearly shown in either Fig. 10 or page 34-35 as alleged by the reviewer. In view of this, the Examiner asserts that the original disclosure fails to comply with the written description required by 35 U.S.C. 112, first paragraph. Therefore, the Examiner will maintain the 112, first paragraph, rejection.

Regarding claim 38, the Applicant alleged that Hata '801 fails to read a signal of a pixel selected from the image sensor, as recited in clam 48 (i.e., see page 10 of the remarks).

In response, the Examiner respectfully disagrees because Hata '801 does in fact show the present claimed invention such as "an image sensor (i.e., Fig. 4) having a plurality of two dimensionally arranged pixels (i.e., noted the light receiving area of the CCD 103 as illustrated in Figs. 4-7) capable of selectively reading out signals (i.e., noted that the image signals of the AE/AF areas of the CCD 103 as shown in Figs. 5-7 of the Figs. 5-7 are selectively read-out to perform the AF/AE as shown in Figs. 8 and 9) from desired pixels (i.e., the sub-AE area 5 and an

AF area 1 as shown in Figs. 5 and 6 provide desired pixels value) for the purpose of at least two of the processes for light metering (AE), focus detection (AF), white balance calculation (i.e., see paragraph 0053) and picture forming for recording (i.e., noted that the image formed in the sensor 103 is for recording in the memory 111/150).

Further, it is corrected that In Fig. 8, in step S1, the AF area 1 (Fig. 6) is set in the AF area by registering data values "from _af lwdx" and "from_aflwdy" in registers "aflwdx" and "aflwady" of the IPP 107, however, this does not limit the system of Hata '801 to selectively read-out signals from desired pixels for the purpose of AF, AE and AWB process. In fact, Figs. 5, 6 and 7 clearly illustrates (i.e., see paragraphs 0040+) that the light receiving area of the CCD 103 is divided into 6 areas so as to form sub-AE areas 1-6. The AE evaluation circuit 1082 is capable of selectively reading out signals from each of the six sub-AE areas to obtain a luminance value for each area (i.e., noted from Fig. 9, that desired luminance value Lv is obtained from the selective area 6 in Fig. 5 in Steps 10 to perform an AE control; see paragraphs 0041 and 0049). Figs. 6 and 7 also illustrates an AF area used for determining the AF evaluation value. The AF areas 1 and 2 are identical to the sub-AE areas 6 and 5 in Fig. 5 for selectively reading out signals from desired pixels (i.e., the pixels readout form the areas 1 and 2 of Figs. 6 and 7) for the purpose of performing AF function.

In view of the above, the Examiner asserts that claim 48 is anticipate by the cleared teaching of Hata '801 for the reasons as discussed above and further shown in the details rejections as set forth below, thus, the Examiner will maintain the previous 102 rejection with respect to claim 48.

Furthermore, the Applicant alleged (in page 11 of the remarks) that it is not disclosed in Norita '767 that AE calculation is implemented on the basis of the readout signal level, and that the image data for writing into the recording medium 7 is created again on the basis of the result of the AE calculation. Claim 4 does not refer to the readout with destructively and the readout with nondestructively when the AE calculation is implemented.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., AE calculation is implemented on the basis of the readout signal level, and that the image data for writing into the recording medium 7 is created again on the basis of the result of the AE calculation. Claim 4 does not refer to the readout with destructively and the readout with nondestructively when the AE calculation is implemented) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In fact, the claim 4 broadly recited by the amendment that "wherein the image sensor again accumulates a charge for storing an image on the basis of a result of the light metering after resetting" and such features are readable of the teaching of Norita '767.

In particular, Norita '767 clearly show in Fig. 9 that, **after resetting** the image sensor 9 at step 40, the image sensor again accumulates a charge (i.e., at Exposure time T2 at Step 44 as discussed in paragraphs 0118+) for storing an image (i.e., noted the writing to Buffer memory at steps 42b for second Exposure time T2) on the basis of the result of the light metering (i.e., noted the light metering performed at first Exposure Time T1 as discussed in paragraph 0115).

In addition, Kijima '451 clearly show Figs. 12-16 that when the depression of the trigger by two steps, then the image sensor attain accumulates a charge for recording the Still Image on the basis of the result of the light metering (i.e., noted the n-LINE and q-LINE readout process for light metering process as shown in Figs. 14-15 of Kijima '451).

In view of the above, the Examiner asserts that Norita '767 does in fact teach the amended limitations, "wherein the image sensor again accumulates a charge for storing an image on the basis of a result of the light metering after resetting", as recited in claim 4. Thus, Examiner will maintains the previous rejections as follows:

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 52 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 52, it is noted that amended limitations "a white balance calculator that **reads out and process signals once again from the pixels of the image sensor without resetting the signals of the image sensor**, after completing of reading out from the image sensor for the process of the processor (i.e., recording/shooting)" are not clearly described in the specification.

It appears from Fig. 9 that the same image output signal read out for the shooting (i.e., step 104) is used for white balancing (step 105), however, fails to show or fairly suggest that WB process is performed by reading the pixels of the image sensor without resetting as recited in present claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 48 is rejected under 35 U.S.C. 102(e) as being anticipated by Hata (U.S. 2004/0061801 A1).

Regarding claim 48, Hata '801 discloses a digital camera (Fig. 1) comprising: an image sensor (103) having a plurality of two-dimensionally arranged pixels (Fig. 4) capable of selectively reading out signals from desired pixels (i.e., Noted the selective reading out signals from desired pixels as shown in figs. 5-7 respectively) for the purpose of **at least two** of the processes for light metering (AE; see Fig. 2), focus detection (AF; see Fig. 2), white balance calculation (AWB; see Fig. 2) and picture image forming for recording (i.e., noted that the image formed in the sensor 103 is for recording in the memory 111/150),

wherein, in response to completion of an output of a certain signal from the image sensor, a signal for implementing another process is output in parallel with immediate process of the signal (i.e., as shown in Figs. 8-9, it is cleared that in response to completion of an output of AF setting steps S2/S3, another process for AE/AWB is implemented in parallel with the AF processing because AE/AWB is implemented while AF is being executed; see paragraphs 0047-0054).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims **4-5, 14-15, 19-21, and 25-26 are** rejected under 35 U.S.C. 103(a) as being unpatentable over **Kijima et al. (U.S. 6,661,451) in view of Norita et al. (U.S. 2004/0169767 A1).**

Regarding claim 4, Kijima '451 discloses a digital camera (Fig. 1), comprising: an image sensor (i.e., the sensor 12; see Figs. 7 and 11) having a plurality of two-dimensionally arranged pixels on which electric charge is accumulated to generate signals, respectively, capable of selectively reading out the signals from desired pixels (i.e., noted the selective reading process as shown in Figs. 6, 7, 9, 10; see col. 7, lines 25+), and

a processor for light metering (i.e., Auto Exposure) read signals of given pixels located in a given area narrow than the whole image area of the image sensor (i.e., as shown in Figs. 4-10, that during the high speed reading, the number of the image pixels selected for processing AE is less than the whole pixels from the imaging area of the image sensor, thus, it is cleared that the area used for AE is narrower than the whole imaging area of the image sensor as claimed; see Fig. 7 in particular), and

including a timer for determining a time length (i.e., as shown in Fig. 1, the elements 20, 22 and 24 functioned as a timer for determining the charge accumulation time length, e.g., 1/45, 1/30, 1/10 or 1/60 second, of the image sensor reaches a predetermined level such that one frame of "n/q" lines of the added signals to calculate for AE; see col. 10, lines 45-68, col. 11, lines 40+ and col. 13, lines col. 14, lines 15+), the light metering being on the basis of the time length (i.e., noted that the AE is calculated for the time period of 1/60 second as discussed in col. 14, lines 15+).

Further, it is noted that Kijima '451 does not explicitly stat that the time length is determined from a start of the accumulation of charge to a time when a signal from the image sensor reaches a predetermined level as recited in present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Norita '767. In particular, Norita '767 teaches the use of a timer (i.e., noted that microcomputer 1 contains a built-in timer for controlling the Exposure time of the sensor 9) determining a time length (i.e., noted that the time length "Ti" between T0 to T1/T2 as shown in Fig. 7) from a star of the accumulation of charge (i.e., noted that charges accumulation is started from T0 as shown in Fig. 7) to a time (i.e., T1/T2 as shown in Fig. 7) when a signal from the

image sensor (9) reaches a predetermined level (i.e., noted the predetermined level C1 and C2 as shown in Fig. 7) and the light metering (i.e., Exposure) being on the basis of the time length (i.e., as shown in Fig. 9, the time length "Ti" is determined in steps ST42a; see paragraphs 0097-00987 and 0114-0119), thereby a user can select an image with desired exposure from the plurality images corresponding to those signals of different exposure times (i.e., see paragraph 0097).

In view of the above, having the system of Kijima '451 and then given the well-established teaching of Norita '767, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Kijima '451 as taught by Norita '767, since Norita '767 state in paragraph 0097 that such a modification would allow a user to select an image with desired exposure from the plurality images corresponding to those signals of different exposure times, thereby making it easy to select the better quality output image.

In addition, Kijima '451 clearly shows Figs. 12-16 that when the depression of the trigger by two steps, then the image sensor attain accumulates a charge for recording the Still Image on the basis of the result of the light metering (i.e., noted the n-LINE and q-LINE readout process for light metering process as shown in Figs. 14-15 of Kijima '451), however, Kijima '451 does not explicitly state that charge accumulation for storing an image on the basis of a result of light metering is after resetting.

However, Norita '767 clearly teaches in Fig. 9 that, **after resetting** the image sensor 9 at step 40, the image sensor again accumulates a charge (i.e., at Exposure time T2 at Step 44 as discussed in paragraphs 0118+) for storing an image (i.e., noted the writing to Buffer memory at

steps 42b for second Exposure time T2) on the basis of the result of the light metering (i.e., noted the light metering performed at first Exposure Time T1 as discussed in paragraph 0115).

In view of the above, having the system of Kijima '451 and then given the well-established teaching of Norita '767, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Kijima '451 as taught by Norita '767, since Norita '767 state in paragraph 0097 that such a modification would allow a user to select an image with desired exposure from the plurality images corresponding to those signals of different exposure times, thereby making it easy to select the better quality output image.

Regarding claim 5, the combination of Kijima '451 and Norita '767 discloses wherein the image sensor is further capable of adding signals of at least two pixels prior to getting the output from the image sensor (i.e., noted from Fig. 7 that the at least the pixels GA and GC are added before outputting from the image sensor 12), and wherein the timer (i.e., the timing control circuits 20, 22 and 24) determines a time length from a start of the accumulation of charge to a time when the added signals reaches a predetermined level (i.e., noted that the time control circuits 20, 22 and 24 are capable of determining a predetermined time length, e.g., 1/45, 1/30, 1/10 or 1/60 second, when the added signals reaches a predetermined level such that a frame of image data; see col. 3, lines 45+, col. 8, lines 30+, col. 10, lines 45-68, and col. 14, lines 15+; also noted that the CPU 1 of Norita '767 is capable of determining the time length of the image sensor 9 base on the predetermined level as shown in Figs. 2 and 7).

Regarding claim 14, Kijima '451 discloses further comprising a focus detector for processing the signal of the image sensor to detect the focusing condition of the camera (i.e., see col. 14, lines 15+).

Regarding claim 15, Kijima '451 discloses wherein the focus detector processes the outputs from the individuals of the pixels of the image sensor to form a digital image to be investigated in the focus direction (i.e., noted the AF process as shown in Figs. 4-10, and 12-15; col. 13, lines 5+, col. 14, lines 15+).

Regarding claim 19, Kijima '451 discloses wherein the image sensor is further capable of adding signals of at least two pixels prior to getting the outputs from the image sensor (i.e., noted the adding of at least two "n/q" pixels sensor as shown in Figs. 7 and 9-10 respectively), and wherein the focus detector processing the added signals when the light metering informs an insufficient brightness of an object in terms of the focus detection (i.e., as shown in Figs. 13-15, the added signals are used during the processing of the AF and AE, thus, it is cleared that AE calculating is capable of informing an insufficient brightness of the object in terms of the AF detection; col. 14, lines 25+ and col. 15, lines 5+).

Regarding claim 20, Kijima '451 discloses wherein the addition means the simple addition of signals from more than two pixels adjacent with each other (i.e., col. 15, lines 10-15).

Regarding claim 21, Kijima '451 discloses wherein the addition means the moving addition of signals from more than two pixels adjacent with each in which the pixels is shifted by one on every addition (i.e., Figs. 9 and 10; col. 10, lines 45+ and col. 11, lines 5+).

Regarding claim 25, Kijima '451 discloses comprising a memory for storing the signals from the image sensor to form a picture image of an object of the camera and a white balance calculator for processing the signals stored in the memory (i.e., see col. 14, lines 15+).

Regarding claim 26, Kijima '451 discloses wherein after accumulation of charge for light metering (AE), the calculation for white balance (AWB) is performed, and the output of the pixel is got from the image sensor for focus detection (i.e., col. 14, lines 35+ and col. 15, lines 5; Figs. 13-15).

7. Claims 4, 14, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hieda '488 in view of **Norita et al. (U.S. 2004/0169767 A1)**.

Regarding claim 4, Hieda '488 discloses a digital camera (Fig. 1), comprising: an image sensor (i.e., the sensor 5) having a plurality of two-dimensionally arranged pixels on which electric charge is accumulated to generate signals (i.e., col. 4, lines 4+), respectively, capable of selectively reading out the signals from desired pixels (i.e., noted the selective reading of the desired pixels as shown in Figs. 6, 7, 16 and 17), and

a processor (i.e., the processor 10 as shown in Fig. 1) for light metering (i.e., noted the AE preprocess circuit 124 as shown in Fig. 1) read signals of given pixels located in a given area narrower than the whole imaging are of the image sensor (i.e., see Figs. 3 and 4), and

including a timer (i.e., noted the circuits 11, 12, 100 and 126) for determining a time information from a start of the accumulation of charge reaches a predetermined level (i.e., noted that the signals generators 11 and 100 of the camera provide a time period for reading the

accumulation of charges form the frame A, B, C, E and D area of the image sensor as shown in Figs. 6, 7, and 16-17, and a predetermined level of exposure value is determined as shown in Fig. 14), the light metering being on the basis of the time information, such as a timing signals (i.e., as shown in Fig. 14, the predetermined level of the signals read from the specific area, e.g., the areas A, B, C, D or E, is used for AE control based on the time information generated by the timing circuits 11 and 100 of the camera; see col. 4 lines 25+, col. 11, lines 10+).

In addition, it is noted that Hieda '488 does not explicitly stated the use of a time length from a start of the accumulation of charge to a time when a signal from the image reaches a predetermined level, the light metering being on the basis of the time length as recited in present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Norita '767. In particular, Norita '767 teaches the use of a timer (i.e., noted that microcomputer 1 contains a built-in timer for controlling the Exposure time of the sensor 9) determining a time length (i.e., noted that the time length "Ti" between T0 to T1/T2 as shown in Fig. 7) from a star of the accumulation of charge (i.e., noted that charges accumulation is started from T0 as shown in Fig. 7) to a time (i.e., T1/T2 as shown in Fig. 7) when a signal from the image sensor (9) reaches a predetermined level (i.e., noted the predetermined level C1 and C2 as shown in Fig. 7) and the light metering (i.e., Exposure) being on the basis of the time length (i.e., as shown in Fig. 9, the time length "Ti" is determined in steps ST42a; see paragraphs 0097-00987 and 0114-0119), thereby a user can select an image with desired exposure from the plurality images corresponding to those signals of different exposure times (i.e., see paragraph 0097).

In view of the above, having the system of Hieda '488 and then given the well-established teaching of Norita '767, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Hieda '488 as taught by Norita '767, since Norita '767 state in paragraph 0097 that such a modification would allow a user to select an image with desired exposure from the plurality images corresponding to those signals of different exposure times, thereby making it easy to select the better quality output image.

Furthermore, Hieda '488 does not explicitly state that the image sensor again accumulates a charge for storing an image on the basis of a result of light metering is after resetting.

However, the above-mentioned claimed limitations are well-known in the art as evidenced by Norita '767. In particular, Norita '767 clearly teaches in Fig. 9 that, **after resetting** the image sensor 9 at step 40, the image sensor again accumulates a charge (i.e., at Exposure time T2 at Step 44 as discussed in paragraphs 0118+) for storing an image (i.e., noted the writing to Buffer memory at steps 42b for second Exposure time T2) on the basis of the result of the light metering (i.e., noted the light metering performed at first Exposure Time T1 as discussed in paragraph 0115).

In view of the above, having the system of Kijima '451 and then given the well-established teaching of Norita '767, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Kijima '451 as taught by Norita '767, since Norita '767 state in paragraph 0097 that such a modification would allow a user to select an image with desired exposure from the plurality images corresponding to those

signals of different exposure times, thereby making it easy to select the better quality output image.

Regarding claim 14, Hieda '488 discloses further comprising a focus detector for processing the signal of the image sensor to detect the focusing condition of the camera (i.e., see Figs. 2 and 13, col. 10, lines 40+).

Regarding claim 15, Hieda '488 discloses wherein the focus detector processes the outputs from the individuals of the pixels of the image sensor to form a digital image to be investigated in the focus direction (i.e., col. 7, lines 30+, col. 8, lines 45+, col. 10, lines 35+).

Regarding claim 16, Hieda '488 discloses wherein a range covering the pixels participating in the focus detection differs from that in the light metering (i.e., noted the different pixels areas B, C and D as shown in Figs. 6, 7 and 16 are used in AF and AE respectively).

8. Claims 4-14, 17-18, 22-23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (U.S. 5,751,354) in view of Norita '767.

Regarding claim 4, Suzuki 354 discloses a digital camera (Fig. 1), comprising: an image sensor (i.e., the image sensing device 4) having a plurality of two-dimensionally arranged pixels on which electric charge is accumulated to generate signals (i.e., col. 7, lines 30+), respectively, capable of selectively reading out the signals from desired pixels (i.e., Figs. 10 – 12B; col. 12, lines 25+), and

a processor (i.e., the processors 7 and 9 as shown in Fig. 1) for light metering (i.e., noted the Exposure adjustment as shown in Figs. 2-9) read signals of given pixels located in a given

area narrower than the whole imaging area of the image sensor (i.e., see Figs. 12A and 12B), and including a timer (i.e., noted the Timing Generator 5 and the CPU 10 functioned as a timer) for determining a time (i.e., the exposure time period of the image sensor 4) from a start of the accumulation of charge to a time (i.e., noted the Exposure time started for the sensor 4 to accumulate charges therein) when a signal from the image sensor reaches a predetermined level (i.e., noted the predetermined level of the charges accumulated under the control of the circuits 5 and 10 as shown in Figs. 10-11 and 12A-12B), the light metering being on the basis of the time (i.e., noted that the Exposure process shown in Figs. 2-9 is on the basis on the exposure time set by the timing circuits 5 and the CPU 10; see col. 12, lines 50+).

In addition, it is noted that Suzuki 354 does not explicitly stated the use of a time length from a start of the accumulation of charge to a time when a signal from the image reaches a predetermined level, the light metering being on the basis of the time length as recited in present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Norita '767. In particular, Norita '767 teaches the use of a timer (i.e., noted that microcomputer 1 contains a built-in timer for controlling the Exposure time of the sensor 9) determining a time length (i.e., noted that the time length "Ti" between T0 to T1/T2 as shown in Fig. 7) from a star of the accumulation of charge (i.e., noted that charges accumulation is started from T0 as shown in Fig. 7) to a time (i.e., T1/T2 as shown in Fig. 7) when a signal from the image sensor (9) reaches a predetermined level (i.e., noted the predetermined level C1 and C2 as shown in Fig. 7) and the light metering (i.e., Exposure) being on the basis of the time length (i.e., as shown in Fig. 9, the time length "Ti" is determined in steps ST42a; see paragraphs 0097-

00987 and 0114-0119), thereby a user can select an image with desired exposure from the plurality images corresponding to those signals of different exposure times (i.e., see paragraph 0097).

In view of the above, having the system of Suzuki 354 and then given the well-established teaching of Norita '767, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Suzuki 354 as taught by Norita '767, since Norita '767 state in paragraph 0097 that such a modification would allow a user to select an image with desired exposure from the plurality images corresponding to those signals of different exposure times, thereby making it easy to select the better quality output image.

In addition, Suzuki 354 clearly shows Figs. 2, 16 and 19 (i.e., see steps 12) that the image sensor again accumulates a charge for recording/photographing (i.e., noted the use of memory for storing the photographed image data; see col. 10, lines 10+) the Image on the basis of the result of the light metering (i.e., noted at steps S12 as shown in Fig. 2, 16 and 19, the image sensor accumulates a charge to perform photography based upon main exposure; see col. 15, lines 55+), however, Suzuki 354 does not explicitly stated that charge accumulation for storing an image on the basis of a result of light metering is after resetting.

However, Norita '767 clearly teaches in Fig. 9 that, **after resetting** the image sensor 9 at step 40, the image sensor again accumulates a charge (i.e., at Exposure time T2 at Step 44 as discussed in paragraphs 0118+) for storing an image (i.e., noted the writing to Buffer memory at steps 42b for second Exposure time T2) on the basis of the result of the light metering (i.e., noted the light metering performed at first Exposure Time T1 as discussed in paragraph 0115).

In view of the above, having the system of Suzuki 354 and then given the well-established teaching of Norita '767, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Suzuki 354 as taught by Norita '767, since Norita '767 state in paragraph 0097 that such a modification would allow a user to select an image with desired exposure from the plurality images corresponding to those signals of different exposure times, thereby making it easy to select the better quality output image.

Regarding claim 5, the combination of Suzuki 354 and Norita '767 discloses wherein the image sensor is further capable of adding signals of at least two pixels prior to getting the output from the image sensor (i.e., noted the mixed signals as discussed in col. 11, lines 43+ of Suzuki 354, and noted the use of time length of "Ti" as shown in Fig. 7 of Norita '767), and wherein the timer determines a time length from a start of the accumulation of charge to a time when the added signals reaches a predetermined level (i.e., see Figs. 10-11, col. 10, lines 40+ and col. 11, lines 25+ of Suzuki 354; noted the use of time length of T1/T2 as shown in Fig. 7 by Norita '767).

Regarding claim 6, the combination of Suzuki 354 and Norita '767 discloses wherein the processor for light metering (i.e., the coarse adjustment of exposure as shown in Figs. 2-9) further comprises an output reader for repeating to get the outputs from the pixels (i.e., the noted the circuits 6, 7, 9 and 10 as shown in Fig. 1 for repeating to get the outputs form the pixels of the sensor 4 for performing the exposure correcting steps as shown in Figs. 3-9) in accordance with a predetermined timetable (i.e., noted the use of exposure time table as discussed in col. 12,

lines 60-65 for repeating to get the outputs of the sensors during the exposure correction steps as shown in Figs. 3-9), and a comparator for comparing the signal with the predetermined level (as shown in Fig. 3, the CPU 10 and processing circuits 7 and 9 compares the signal with the predetermined level stored; see col. 12, lines 40-68), and wherein the timer (i.e., the circuits 5, 6 and 10 as shown in Fig. 1 of Suzuki 354; and the computer 1 of Norita '767) determines a time length (i.e., noted the time period as shown in Figs. 10 and 11 of Suzuki 354, and noted the use of time length of "Ti" as shown in Fig. 7 by Norita '767) from a start of the accumulation of charge to a time when the comparator informs that the added signals reaches the predetermined level (i.e., as shown in Figs. 2, 10 and 11, the CPU 10 and the circuits 5 and 6 are capable of determining a time period from the start of the accumulation of charge at the step S3 with diaphragm open to a time when the comparator informs that the added signals reaches the predetermined level as shown in the Steps S4 with the diaphragm closed; see Figs. 2-9 and col. 14, lines 50+ of Suzuki 354).

Regarding claim 7, Suzuki 354 discloses wherein the predetermined level corresponds to the optimum exposure level of the camera (i.e., col. 12, lines 60+ and col. 15, lines 45+).

Regarding claim 8, Suzuki 354 discloses wherein the output reader repeats to get the outputs form the pixels with the charge accumulation continued without being reset during the period in which the timer is determining the time (i.e., as shown in Fig. 10, the output reader circuit 7, 9 and 10 repeated to get the outputs 2, 3 and 4 form the vertical transfer of the pixels with the accumulation continued without being reset during the electronic shutter period in which the timer circuits 5, 6 and 10 is determining the shutter time respectively; see col. 12, lines 30+).

Regarding claim 9, Suzuki 354 discloses wherein an interval between the repetitions of getting the output by the output reader is changeable among pixels (i.e., noted that the range finding areas is changeable among pixels as shown in Figs. 10-11, and 12A-12B; see col. 11, lines 25+ and col. 12, lines 25+).

Regarding claim 10, Suzuki 354 discloses wherein the output reader gives priority to a pixel of the shorter interval in getting the output (i.e., noted form Fig. 10, the shorter interval is reading first, thus, it is cleared that the shorter interval is given priority to get the output).

Regarding claim 11, Suzuki 354 discloses wherein the signals from pixels of the same interval are added prior to getting the outputs from the pixels (i.e., see Fig. 11; col. 11, lines 25+).

Regarding claim 12, Suzuki 354 discloses wherein an interval between the repetition of getting the output by the output reader is variable for changing a range of light metering (i.e., see Figs. 10-11 and 12A-12B, col. 11, lines 25+ and col. 12, lines 25+).

Regarding claim 13, Suzuki 354 discloses comprising an aperture (i.e., Fig. 1, the element 2) through which the image sensor (4) receives light, wherein the aperture is variable for changing a range of light metering (i.e., col. 14, lines 60-68).

Regarding claim 14, Suzuki 354 discloses further comprising a focus detector for processing the signal of the image sensor to detect the focusing condition of the camera (col. 16, lines 25+).

Regarding claim 17, the combination of Suzuki 354 and Norita '767 discloses wherein the image sensor (4) is reset after the time length relating to the light metering to accumulate charge for the same period as the time length to get signals for the focus detection (i.e., noted

form Fig. 4 that the sensor 4 is reset at steps S217 after the same time period relating to the Exposure adjustment and the Focus adjustment were performed at the steps S213 of Suzuki 354; and noted from Figs. 7-9 of Norita '767, the use of time length "Ti" is used for exposure while Focus lens 14 is being focused).

Regarding claim 18, the combination of Suzuki 354 and Norita '767 discloses wherein the image sensor is reset (i.e., noted the resetting performed at the steps S217 of Fig. 4 of Suzuki 354) after the focus detection (i.e., Fig. 4, the steps S213 of Suzuki 354) to accumulate charge for the time length (i.e., noted the time period as shown in Figs. 10 and 11 of Suzuki 354; and noted the use of time length of "Ti" determined by the Computer 1 as shown in Fig. 7 of Norita '767) calculated from light metering calculation (i.e., noted the Exposure calculation as shown in Figs. 4, the steps S213) to get signals for forming a picture image of an object of the camera (100).

Regarding claim 22, Suzuki 354 discloses comprising a white balance calculator (i.e., noted the white balance as shown in Figs. 4-8; see col. 16, lines 25+ and col. 19, lines 1-11) for processing the signal obtainable from the image sensor without resetting the image sensor after the focus detection (i.e., as shown in Fig. 4, step S218, the sensor is reset at step S221 after the focus, exposure and white balance calculations are performed at step S218, thus, a white balance calculation is processed without resetting the image sensor after the focus detection).

Regarding claim 23, Suzuki 354 discloses wherein the image sensor is further capable of addition signals of at least two pixels prior to getting the outputs from the image sensor (i.e., noted the mixing of pixels as shown in Fig. 11; see col. 11, lines 40+), and wherein the white balance calculator processes the added signal (i.e., col. 12, lines 30+, col. 13, lines 25+, and col. 16, lines 25+).

Regarding claim 24, Suzuki 354 discloses comprising picture image processor for processing the signals (i.e., Fig. 1, the elements 7 and 9) from the image sensor (4) to form a picture image of an object of the camera (100) and a white balance calculator (col. 16, lines 25+ and col. 19, lines 1-12) for processing the signal obtainable from the image sensor (4) without resetting the charge accumulated on the image sensor for the picture image (i.e., as shown in Fig. 4, step S218, the sensor is reset at step S221 after the focus, exposure and white balance calculations are performed at step S218, thus, a white balance calculation is processed without resetting the image sensor after the focus detection).

9. Claims 27 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kijima '451 in view of Norita '767 and further in view of Masaki (Translation of JP 11-344662).

Regarding claim 27, although Kijima '451 shows the focus detector including an optical system (40) for forming an image of an object on the image sensor (12) and an aperture (44) for passing light flux of the optical system (40) respectively, Kijima '451/Norita '767 does not explicitly show a pair of apertures and filters each arranged across the divided light passing through the pair of apertures as recited in the present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Masaki '662. In particular, Masaki '662 teaches the use of a pair of apertures (i.e., see Fig. 2, the diaphragm 102 has a pair of holes 102a and 102b) and filter (i.e., noted the diaphragm 102 is arranged G filter 102a and M filter 102b as shown in Fig. 2; see paragraphs

0023+) each arranged across the divided light passing through the pair of apertures (102a/102b) as recited in the present claimed invention.

In view of the above, having the system of Kijima '451 and then given the well-established teaching of Masaki '662, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Kijima '451 as taught by Masaki '662, since Masaki '662 states in the abstract that such a modification would offer the AF equipment of the camera with high-speed focus actuation.

Regarding claim 28, the combination of Kijima '451, Norita '767 and Masaki '662 shows wherein the image sensor is color image sensor having read, green and blues pixels (i.e., see Fig. 2 of Kijima '451; and noted the R, G, B sensor 103 of Masaki '662) and wherein the filter arranged across the divided light fluxes are green and magenta filters (i.e., Fig. 2 of Masaki '662), respectively.

Regarding claim 29, the combination of Kijima '451, Norita '767 and Masaki '662 shows wherein the image sensor receives light through the pair of apertures on the light metering (i.e., it is noted that the aperture pairs as taught by Masaki '662 obviously can be used in the AE system of Kijima '451 because the exposure of the image data captured by the sensor 103 in the camera system of Masaki '662 has to be corrected while using a pair of apertures).

10. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kijima '451 in view of Norita '767 and Masaki '662 as applied to claims discussed above, and further in view of Sunao et al. (Translation of JP 09-184973).

Regarding claim 30, the combination of Kijima '451, Norita '767 and Masaki '662 does not explicitly shows an another aperture through which the image sensor receives light, wherein the pair of apertures are replaced by the another aperture for changing a range of light metering as recited in present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Sunao '973. In particular, Sunao '973 teaches the use of another aperture through which the image sensor receives light (i.e., see the aperture other than 2a and 2b as shown in Fig. 3), wherein the pair of apertures (2a/2b) are replaced by the another aperture for changing a range of light metering as recited in present claimed invention (i.e., see paragraphs 0018+).

In view of the above, having the system of Kijima '451 and then given the well-established teaching of Sunao '973, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Kijima '451 as taught by Sunao '973, since Sunao '973 states in the abstract that such a modification would offer the AF equipment of the camera with quick focusing without necessitating a sensor used only for focusing on a subject.

Allowable Subject Matter

11. Claims 49-51 are allowable over the prior art of record, since all the features as recited in claims 49-51 are not shown or fairly suggested by the prior art of record.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 571-272-7314. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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March 23, 2006